

## In the Claims

- 1 1. (currently amended) A method for locating a mobile node in a partially  
2 synchronized wireless network, comprising:
  - 3 measuring a first time interval to transmit a first message from a first  
4 stationary node at a first known location to a mobile node at an unknown  
5 location;
  - 6 measuring a second time interval to transmit a second message from a  
7 second stationary node at a second known location to the mobile node, in  
8 which the first stationary node is time synchronized with the second  
9 stationary node;
  - 10 broadcasting, from the mobile node, a third message to a third  
11 stationary node at third known location and a fourth stationary node at fourth  
12 known location;
  - 13 measuring a first received signal strength of a the third message  
14 ~~transmitted by the mobile node to a~~ at the third stationary node ~~at third~~  
15 ~~known location;~~
  - 16 measuring a second received signal strength of the third message  
17 ~~transmitted by the mobile node to a~~ at the fourth stationary node ~~at fourth~~  
18 ~~known location;~~
  - 19 determining a first set of possible coordinates of the mobile node from  
20 the first time interval and the second time interval;
  - 21 determining a second set of possible coordinates of the mobile node  
22 from the first received signal strength;
  - 23 determining a third set of possible coordinates of the mobile node  
24 from the second received signal strength; and

25 intersecting the first, second and third sets of possible coordinates of the  
26 mobile node to estimate a location of the mobile node.

1 2. (original) The method of claim 1, in which each node includes a unique  
2 identification, and each message includes a unique serial number.

1 3. (original) The method of claim 1, in which the mobile nodes are sensor  
2 nodes in an ad hoc wireless network.

1 4. (original) The method of claim 1, in which the messages are transmitted in  
2 response to a locate request message identifying the mobile node.

1 5. (original) The method of claim 1, in which the first set of possible  
2 coordinates is a solution set of a hyperbolic function.

1 6. (original) The method of claim 1, in which the first and second set of  
2 possible coordinates are solution sets of circular functions.

1 7. (original) The method of claim 1, in which a communication range of the  
2 mobile node is substantially less than a transmit communication range of the  
3 stationary nodes.

1 8. (currently amended) A system for locating a mobile node in a partially  
2 synchronized wireless network, comprising:

3 a mobile node at an unknown location configured to obtain a first time  
4 interval to transmit a first message from a first stationary node at a first  
5 known location to the mobile node and a second time interval to transmit a

6 second message from a second stationary node at a second known location  
7 to the mobile node, in which the first stationary node is time synchronized  
8 with the second stationary node, and further configured to broadcast a third  
9 message to a third stationary node at a third location and a fourth stationary  
10 node at a fourth known location;

11 a third stationary node at a third known location configured to  
12 measure a first received signal strength of a third message ~~transmitted~~  
13 broadcast by the mobile node;

14 a fourth stationary node at a fourth known location configured to  
15 measure a second received signal strength of the third message ~~transmitted~~  
16 broadcast by the mobile node;

17 means for determining a first set of possible coordinates of the mobile  
18 node from the first time interval and the second time interval, a second set of  
19 possible coordinates of the mobile node from the first received signal  
20 strength, and a third set of possible coordinates of the mobile node from the  
21 second received signal strength; and

22 means for intersecting the first, second and third sets of possible  
23 coordinates of the mobile node to estimate a location of the mobile node.